

CLAIMS

1. A method for automatically inserting small items into envelopes, particularly documents or objects to be transmitted in envelopes using a mailing service by means of a device comprising a means for storage and for successively feeding individual envelopes, a means for moving the documents or objects to be transmitted toward the individual envelopes comprising a folded closing flap, and a means for introducing one of these documents or one of these objects into one of the envelopes, the method being characterized in that the envelopes are stored in such a way that the flap of each individual envelope is located on the bottom of the envelope and towards the front in the direction of removal, and in that the flap is unfolded downwards in the direction of envelope opening, in that the envelope flap is moved into contact with the surface of a control drum, and in that each envelope is individually and successively displaced by pulling its flap placed against the exterior surface of the control drum towards a zone for introduction of one of the documents or one of the objects, in that the envelope is then opened, and in that the document or the object is introduced into the previously opened envelope.
2. A method according to claim 1 characterized in that the envelope flap is unfolded by generating at least one stream of air.
3. A method according to claim 1 characterized in that the envelope flap is placed against the surface of the control drum by radial suction produced inside the drum.
4. A method according to claim 1 characterized in that the envelopes are detached from the control drum by means of at least one scraper that is tangential in relation to the surface of the drum.
5. A method according to claim 1 characterized in that each envelope is opened by means of opening guides.
6. A method according to claim 5 characterized in that the enveloped is compressed laterally.
7. A device (10, 50) for implementing the method of automatically inserting small items into envelopes, particularly documents or objects to be transmitted by

a mailing service, according to claim 1, the device comprising a storage means (12, 52) and a means for successively feeding individual envelopes (15), a means for feeding the documents or objects to be transmitted toward the individual envelopes which comprise a folded closing flap, and a means for introducing one of these documents or one of these objects inside one of the envelopes, characterized in that the means of feeding the individual envelopes comprises a control drum (13, 53) which displaces the envelopes (15) individually and successively from the storage means (12, 52) towards a zone for introducing one of the documents or one of the objects into one of the individual envelopes, and in that the means for introducing one of the documents or one of the objects into one of the envelopes comprises a means (14, 22, 23; 54, 52, 63) for unfolding the flap of the individual envelope and opening the envelope.

8. A device according to claim 7 characterized in that the control drum (13, 53) comprises at least one peripheral zone (17, 57) perforated with openings (20, 60) and in that the openings are connected to a suction device in an intermediate zone between the storage means and the zone for introduction of one of the documents into one of the individual envelopes.
9. A device according to claim 8 characterized in that the openings (20, 60) are connected to a pressurized air generating device in the zone for introduction of one of the documents into one of the individual envelopes.
10. A device according to claim 7 characterized in that the control drum (13, 53) comprises on at least a portion of its periphery a covering (17, 57) with a high coefficient of friction.
11. A device according to claim 10 characterized in that the peripheral covering (17, 57) on the control drum (13, 53) extends over an angular section comprising between 25% and 75% of the periphery.
12. A device according to claim 10 characterized in that the peripheral covering (17, 57) on the control drum comprises several parallel bands (18, 58) extending over an angular section comprising at least between 25% to 75% of the periphery.
13. A device according to claim 7 characterized in that the means for opening the

- individual envelopes comprises at least one rotary cam (14, 54) which engages below the flap of each individual envelope in order to unfold it.
14. A device according to claim 13 characterized in that the rotary cam (14, 54) is driven synchronously with the control drum.
 15. A device according to claim 13 characterized in that the rotary cam (14, 54) is provided with at least one organ (23, 63) generating at least one stream of air (24, 64) to assist with unfolding the flap of each individual envelope in order to open it.
 16. A device according to claim 13 characterized in that the rotary cam (14, 54) is provided with at least one projection (22, 62) for initiating the unfolding of the flap of each individual envelope.
 17. A device according to claims 7 and 13 characterized in that the control drum (13, 53) and the rotary cam (14, 54) are the same diameter and are driven synchronously at the same speed and in that along one portion of their circular trajectory, the rotary cam (14, 54) is in contact with the peripheral surface of the control drum (23, 53) to drive one envelope from the storage means (12, 52) towards the introduction zone.
 18. A device according to claim 7 characterized in that it comprises at least one scraper (25, 65) for detaching the individual envelope from the control drum (13, 53) in the introduction zone.
 19. A device according to claims 7 and 12 characterized in that it comprises several scrapers (25, 65) arranged in parallel, the scrapers being located between the parallel bands (18, 58) of the peripheral covering (17, 67) on the control drum.
 20. A device according to claim 7 characterized in that it comprises lateral deflectors (36) to push together the lateral edges of the individual envelopes and assist in opening them.
 21. A device according to claim 20 characterized in that the lateral deflectors (36) comprise guide rollers.
 22. A device according to claim 20 characterized in that the lateral deflectors (36) comprise guide profiles.
 23. A device according to claim 7 characterized in that the control drum (53)

comprises at least two cylindrical segments (80) separated by at least one unattached ring (81).

24. A device according to claim 23 characterized in that the unattached ring (81) is formed of a roller.